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THE ROLE OF DEVELOPMENTAL JOB CHARACTERISTICS AND LEARNING BEHAVIOR IN CAREERS OF MBAs[1]

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THE ROLE OF DEVELOPMENTAL JOB CHARACTERISTICS AND LEARNING BEHAVIOR IN CAREERS OF MBAs

Abstract

In this study an interactive model was used to examine the individual career development process on the job. The role of developmental job characteristics and individual learning behavior in careers of MBAs was examined by analyzing repeated measures of these research variables. We performed hierarchical regressions and difference-of-means tests based on these survey data from early-career MBAs. Several consistent relationships were found. For example, we found that obstacles and transitions have a positive effect on objective career success via instruction oriented learning behavior. This dynamic was found for the period of two years after graduation. For the period of only one year after graduation, it was found that planned learning behavior accounts for differences in the perceived amount of task-related developmental characteristics of a job and in the perceptions of personal career development. In addition, we detected stability's of learning behavior and developmental job characteristics during the early career stage. The results provide a promising platform for future research on the individual development process on the job in a career era of personal responsibility for learning and development.

Key words: *Individual career development; Developmental job characteristics; Learning behavior*

THE ROLE OF DEVELOPMENTAL JOB CHARACTERISTICS AND LEARNING BEHAVIOR IN CAREERS OF MBAs

Based on the complex interaction between individuals and their organizational environments, models have emerged that describe humans as self-regulating living systems, which both affect and are affected by their environments (Bandura, 1991; Carver and Scheier, 1981; Ford, 1987; Karoly, 1993; Latham and Locke, 1991; Powers, 1973). This dynamic perspective of the learning process is supported by the social construction theory (James *et al.*, 1978; James and Jones, 1980; James and Tetrick, 1986). According to this theory, individuals learn and develop within social and mutually creating relationships between their work practices and the changing environment over time.

Not everyone has the same capacity (Morrison and Brantner, 1992) or ability to learn from experience (Burke, 1989) and people differ in their approach to learning (Van der Sluis, 1999; Dechant, 1990; Kelleher, Finestone and Lowy, 1986). The way in which an individual learns or the amount in which s/he is able to learn matter. An individual's way of learning, that is the learning behavior, will effect the kind and extent of learning from any particular situation.

Based on these notions, it is hardly surprising that research suggests that both the learning context and learning behavior influence occupational achievement (Spreitzer et al., 1997; Colarelli et al., 1987; Hoeksema, 1995; McCauley et al., 1994). In this study, these key elements of current professional careers are examined. In a career context where continuous learning is the hallmark of managerial careers (Weick, 1996), fewer developmental job characteristics are probably followed by lower personal development and less improvement of knowledge and skills. This will result in lower career satisfaction and lower career progress. In sum, learning conditions influence individuals' learning behavior and vice versa. Both relations influence individuals' career development, and therefore career outcomes like career satisfaction and income.

Time and *timing* may well effect the role of learning opportunities and learning behavior on outcomes of career development. For example, the effects of learning opportunities on these outcomes may be affected by the time elapsed between

opportunities and career outcomes and the influence of learning behavior on later performance and career success may be strengthened or weakened over time (Brief and Hollenbeck, 1985; Morrisson and Brantner, 1992; Bauer and Green, 1998). These dynamics were recently illustrated by Vancouver (1997) who showed that a person's behavior can change the environment and that environmental characteristics subsequently can affect the person's behaviors and development. Besides, timing of learning behavior or having a developmental job could play a role in the career development. The effect of those two factors on career development may differ between career stages (Van der Sluis, 2000).

For studying the affect of developmental job components and individuals' learning behavior on career success over time, we based our study on an interactive research model as schematically presented in Figure 1.

Insert Figure 1

The interactive nature of career development determined by the mutual relationships between the learning environment and the individual follows from the theoretical assumptions behind career development as described in the first paragraph Furthermore, several empirical studies have suggested that the personal development process on the job id a result of the interaction of personal and organisational characteristics (Van Maanen, 1977; Colarelli *et al.,* 1987; Gherardi *et al,* 1998; Richter, 1998).

We examined the conceptual model by gathering and analyzing repeated measures of the main research variables. Our purpose of this paper is (1) to develop and test hypotheses that identify the role of developmental job characteristics and individual learning behavior in career development, (2) to explore causal relationships between these two factors, and (3) to detect stability's of developmental job characteristics and learning behavior during the early career stage.

Before discussing this, we will explain the two factors defined as success factors for career development.

Developmental job characteristics

McCauley *et al.* (1994) developed the Developmental Challenge Profile (DCP) to assess developmental opportunities as part of the learning environment for a variety of management jobs. The DCP was designed to look at components or features of jobs that foster learning about managerial responsibilities and grew out of a research project which investigated how executives learn and grow over their careers (McCall *et al.,* 1988). One purpose of this project was to understand which experiences were important for development. An assumption made in this research was that managers indeed do develop over the course of their careers and that this development is driven by the manager's major experiences.

McCauley *et al.* (1994) conceptually grouped developmental components of managerial jobs into four categories: Transitions, Task-related characteristics, Obstacles, and Support. One purpose of this project was to understand which experiences were important for development. Transitions are defined as changes in work role, such as a change in job content, status, or location. Task-related characteristics include creating change, high level of responsibility, and non-authority relationships. These characteristics are related to problems and dilemmas stemming from the task itself. Obstacles refer to a lack of support from a boss or colleagues and to adverse business conditions. And, support as a category of developmental job characteristics was defined by supervisory support.

Learning behavior

It is widely suggested that not all people learn equal1 y well from the same kind of experiences at work (Spreitzer *et al.,* 1997). As such, career developmen t would likely be enhanced by the way of learning.

Nevertheless, there is a lack of studies of learning behavior in organizational contexts (Sadler-Smith, 1998). Only two relevant studies exist with respect to managerial learning, including Hoeksema (1995) and recently Megginson (1996). In both studies learning behavior is considered within an organizational context. From these studies, a learning behavior can be summarized as 'a series of behaviors which enables one to

structure and motivate their own work behavior by setting goals, practicing new and desired behaviors, keeping track of progress, and rewarding oneself for goal achievement'. In short, a learning behavior is 'an approach of learning tasks' (Van Parreren, 1989). The essence of this notion is that the learning behavior represents a distinctive and habitual manner of acquiring knowledge, skills or attitudes through experience.

Hoeksema et *al*. (1997) distinguished two different learning behaviors; meaning oriented learning behavior and instruction oriented learning behavior. The former was defined by a search for the deeper meaning of experiences on the job and the latter by a focus on instructions to meet one's obligations and to answer expectations.

In another study, Megginson (1996) defined also two kinds of learning behavior based on exploration of this phenomenon among managers. He found that managers learn in a planned or an emergent way, the two relatively excluded. He defined planned learning as a deliberation/forethought approach and emergent learning as an unpremeditated exploration of work experiences.

Theoretically, these four learning behaviors are related to each other, based on two dimensions. One dimension includes the two extremes 'learning' and 'performance'. The other dimension includes the two extremes 'retrospective learning' and 'prospective learning' (Van der Sluis, 2000). These notions were empirically evidenced by factor analyses of survey data collected from European managers (Van der Sluis, 1999d).

Therefore, the four kinds of learning behavior can be presented in a two-by-two matrix as showed in Figure 2.

Insert Figure 2

HYPOTHESES

Our focus was particularly on the relationships of developmental job characteristics and learning behavior with individual career development. In other words, we wanted to test the role of both characteristics of the job and individual learning behavior in career development over time. Therefore, we first developed hypotheses as

described below. After that, we further examined our data sets by simple data analyses to disentangle significant relationships as depicted in our research model.

First, the effect of developmental job characteristics on career development is analyzed. Hereafter, we looked at relations between learning behavior and career development.

Effect of developmental job characteristics on career development (Hl)

It is widely accepted that more developmental job characteristics will enhance the development of personal skills and knowledge. This will increase individual's employability, and therefore, causes higher perceptions of career development and higher competitive advantage. The latter will increase levels of income.

The impact of developmental job characteristics on career development is evidenced in a study of over 600 managers by Wick (1989). He found job experiences to account for 70% of all developmental experiences. Similarly, Lowy *et al.* (1986) found that the majority of managerial learning occurs informally on the job, based on developmental opportunities on the job. From these findings follows that it is clear that career development will be enhanced when managers are faced with challenging situations.

The relation between developmental job characteristics and career outcomes was already investigated in an early study of developmental processes of Berlew and Hall (1966). They found that the level of challenge of an initial job in an organization was predictive of effectiveness and success. Recently, a few studies show empirically evidence for relationships between developmental job characteristics and career outcomes (Hunt, 1991; Keys & Wolfe, 1988; Wexley & Baldwin, 1986).

Although the relative mix of learning sources can vary from company to company, in this study we were interested in the effects of the total mix of individual developmental job characteristics. We wanted to examine how developmental job characteristics of an individual are related to career outcomes, in particular to the level of income and the personal perception of one's own career development.

The relation between developmental job characteristics and income

Ineffective learning environments hinder continuous learning and, hence, individual effectiveness (Tannenbaum, 1997). Therefore, an environment with many developmental job characteristics is supposed to enhance career development. This suggests that the amount of developmental job characteristics faced by an individual will influence employee's performance and therefore, probably, the level of income.

The link between performance ratings and pay is well documented by Gerhart & Milkovich (1992). The general finding is that there is a positive relationship between performance and income, although it is weak.

Besides, a working environment with developmental job characteristics includes more difficulties and complexities than an environment with less challenging situations. And, more difficulties and complexities are probably negotiated in rewards.
Based on these suggestions, we hypothesize:

Hypothesis la. More developmental job characteristics will result in higher income.

The relation between developmental job characteristics and perceived career development

On the current job market, individuals are agents of their own development (Weick, 1996). Therefore, they are interested in jobs or functions in which they can learn and develop their skills and knowledge. Such learning environment, where they are stretched and challenged, can help individuals work on their personal goals and enhance their development.

Therefore, employees are likely to be motivated most by work that permits the enhancement of occupationally valued skills. In such an environment, they feel comfortable because they think that they are doing right in order to work on their development and career. Recently, Tannenbaum (1997) evidenced these notions. He found that learning conditions, like situations wherein opportunities are provided or wherein supervisors support training and development, individuals reported greater satisfaction with development.

Based on this, we expect that perceived career development will be greater in an environment that provides developmental job characteristics. Therefore, we hypothesize:

Hypothesis lb. A work environment with more developmental job characteristics will be followed by higher perceived career development.

Effect of learning behavior on career development (H2)

Individual learning behavior will probably influence career development as a result of the relation between the way a person learns from the environment and a personal system of reference that gives them a platform for adding their knowledge. Each system of reference is different for each person that will influence the way a person learns from the environment and therefore to the learning outcomes. However, the way people learn from a job is a noticeable omission from studies that examined a broad array of influences on career development of managers (Judge *et al.*, 1995). Nevertheless, there is some evidence that learning behavior influences career attainment and advancement (Dreher & Bretz, 1991; Howard & Bray, 1988).

The relation between learning behavior and income

Focussing on income as a career outcome, several previous studies have found that cognitive ability is predictive of income (see Gottfredson & Crouse, 1986; Siegel & Ghiselli, 1971). Recently, Hoeksema *et al.* (1997) found evidence for relations between specific learning strategies and income. Based on these findings, we expect that different kinds of learning behaviors have different impact on the level of income.

Therefore, we hypothesize:

Hypothesis 2a. Learning behavior affects income.

The relation between learning behavior and perceived career development

Research has clearly demonstrated that scores on a general learning ability test are most predictive for career development in complex jobs, such as those of MBAs and other executives (Hunter, 1986). Relative little research has linked learning behavior as

such to perceived career development, although some evidence suggest that some kind of learning behavior positively affect job performance consistently throughout a career (Judge *et al.*, 1997), which will be linked with an individual's perception of their career development.

Recently, this argument was confirmed in the study of Tannenbaum (1997). He found that individuals with a learning behavior featured by a greater awareness of the big picture and underlying relations reported higher levels of satisfaction with their development (Tannenbaum, 1997). And, people who learn self-directed had better ratings for their job performance and better competence development (Tannenbaum, 1997), which will be positively correlated with perceived career development.

Following this analysis, we hypothesize

Hypothesis 2b. Learning behavior affects the perception of career development.

METHOD

Sample and procedure

The study was conducted among MBA-graduates from three classes of a two-year full-time MBA-program from an international business school. The different data sets we used in this study are the following.

Insert Table 1

The data can either be presented as data as collected each year per class or as data as collected at a specific point in time, reflecting the number of years after graduation. In Table 1 both ways of presentation are shown.

The three-pane1 nature of the data desired to test for differences between the three groups before aggregating the data. From these tests occurred no differences, which justified data-aggregation of the three panels.

The sample was not intended to be representative of the workforce as a whole. Nevertheless, it provides a relatively homogenous sample in terms of age group, educational attainment, intellectual ability, career stage, and choice of management as a

career, in an era of new careers. By measuring the concept of managerial learning and development, this sample in particular could illustrate the nature of this concept. In addition, there was an important treatment effect in the sample: All those surveyed had recently made a very large investment of time, effort, and money in obtaining an MBA degree.

Measures

Consistent with Judge *et al.* (1995, 1997) and Kotter (1995), we measured career development as follows.

Career development

Consistent with Judge *et al.* (1995, 1997), we defined career development as the outcome or achievement individuals have accumulated as a result of their work experiences. On the basis of prior research (Gattiker & Larwood, 1988; Judge *et al.* 1995, 1997), we consider career development to be comprised of extrinsic and intrinsic success components. Extrinsic career success is relatively objective and visible such as pay and ascendancy (Jaskolka, Beyer, & Trice, 1985), while intrinsic career success is defined by the individual, such as when an individual evaluates his or her career or job satisfaction (Gattiker & Larwoord, 1988).

Judge *et al.* defined extrinsic career success in terms of salary and number of promotions, and intrinsic career success in terms of job and career satisfaction. These are relevant facets of career success. In our study, we included these facets in a similar way, although we adjusted the measurement of career development to apply this to our rather homogenous sample of managers. We will explain this in further detail.

Our sample consisted of managers in the same career stage because of their similar background. From this followed that we could measure extrinsic career success only by identification of *salary* and not consider the number of promotions because of the low variance of that indicator among our sample. With respect to intrinsic career success, we asked our respondents to indicate whether they were proud of their work, whether their superior was satisfied with their work, and whether they felt comfortable in their job.

These three items were measured also on a 7-point Likert-type scale from (1) 'strongly disagree' to (7) ' strongly agree'. The reliability of this measure was a = .70.

This measurement of perceived career development indicates intrinsic career success, although it is not titled as job and career satisfaction conform Judge *et al* (1995, 1997). However, in our study we were willing to indicate individuals' perception of their career and performance more than a normative measure like their satisfaction with their career success. Moreover, in relation with the learning context and learning behavior, perceived career development is probably a better indicator of subjective career outcomes than career and job satisfaction. This could be derived from our general knowledge of the intercorrelation of satisfaction and the perception of developmental job characteristics; more perceived developmental job characteristics is probably strongly be linked with job and career satisfaction.

Developmental job characteristics

The quality of the learning environment was measured by asking respondents how well statements described elements they faced in their job. This was measured on a 5-point Likert scale from (1) 'not at all descriptive' to (5) 'extremely descriptive'. Validity evidence for this scale was build by McCauley *et. al.* (1994) and Van der Sluis (2000). 42 items measured four distinguished kinds of developmental job characteristics: Transitions (7 items), obstacles (8 items), support (3 items), and task-related characteristics (24 items). The latter kind of characteristics were divided into three different groups: Creating change (8 items), High level of responsibility (12), and Non-authority relationships (4 items). All reliabilities were *Cronbach alpha* > .60.

Learning behavior

We measured learning behavior using both the scale of Hoeksema (1995) and the scale of Megginson (1996). This resulted in a measurement of 17 items: 8 of Hoeksema's scale to be answered on a 5-point scale from 1 (never or only rarely true for me) to 5 (always or almost always true for me) and 9 items of Megginson's scale to be answered on a 'I-point scale from 1 (never true) to 7 (always true). The scale was validated by Van

der Sluis (2000), based on factor analysis and reliability analyses for each factor. The results are showed below.

Insert Table 2

Although the reliability of the two factors measuring, respectively, big picture oriented learning behavior and underlying process oriented learning behavior were rather low (.57 and .56), we decided to do the main data analyses with the inclusion of these indicators. The underlying reason for this was the frequently suggested impact and relevance of these kinds of learning behavior for managerial learning and development, in the sense of sense making (Weick, 1996)

Because factor 6 was not reliable (Cronbach's alpha = .49), we decided to do the further analyses without this kind of learning behavior. In fact, emergent learning seems to be obvious and is probably done by all individuals. It is closely linked with tacit learning as a result of the unconsciousness of this kind of learning (Bird, 1996). MBAs in particular are expected to engage in this learning behavior as a result of their own responsibility for their learning and development.

Results

Means and standard deviations

Means, standard deviations, and Pearson correlations among the main research variables are provided in Table 3, 4, and 5.

Insert Table 3, Table 4, and Table 5

In Table 3 and 4 are presented the means, the standard deviations, and the zero-order correlations for the study variables as collected in, resp., 1998 (N=63) and 1999 (N=98). The composition of this data set can be seen in Table 1. Table 5 shows means, standard deviations and zero-order correlations of respondents all in the same career stage, e.g., two years after their graduation. We will discuss the descriptions of all data sets in general.

Concerning learning behavior, respondents reported, compared to other learning behavior, relative high levels of meaning oriented learning behavior -both with a big picture focus and a focus on underlying processes- as well as high levels of planned – tacit- learning behavior. On the contrary, relatively low levels were reported of instruction oriented learning behavior and planned -explicit- learning behavior.

Concerning developmental job characteristics, respondents reported, compared to other learning opportunities, a relatively high level of support. However, this figure has, for all data sets, a relatively high standard deviation, meaning that there is a wide margin between individual scores. This illustrates respondents' wide range of perceptions of amount of support from their boss. Furthermore, the tables show a low mean score on transitions meaning a relatively low amount of transitions countered by our respondents

Concerning career development, respondents reported rather high levels of both their subjective and objective job performances. As we have pointed out earlier, because of many shortcomings of this measure, the level of salary has to be considered as only a broad indication of their annual income. As can be seen from the standard deviations, the levels of income of our respondents differed a lot between individuals.

Testing hypotheses

Effect of developmental job characteristics on income (Hla)

From the correlation diagram follows that there is no significant correl ation between developmental job characteristics and income in general. However, for the 1998 data there was a positive significant relationship between obstacles and income as a particular category of developmental job characteristics on the job ($r = .32$; $p < .05$). The 1999 data showed a positive significant relationship between task-related characteristics and income ($r = .24$; $p < .05$). The career stage data showed next to these two correlations also a negative significant correlation between support and income $r = -.30$; $p < .01$).

To test hypothesis la, we analyzed the three different data sets computing income as dependent variable and, respectively, obstacles, task-related characteristics as predictor. The results showed several significant relationships between income and these three developmental components. Furthermore, we did difference-of-means tests to

investigate whether those who had more developmental job characteristics had higher levels of income or not. For each data set we found that those who had more developmental job characteristics in the category 'Task-related characteristics' had higher levels of income than those who had fewer developmental job characteristics characterized as such. This could be a result of more compensation for more responsibilities and autonomy. The effects of developmental job characteristics from the two categories; obstacles and task-related characteristics, on income thus supported hypothesis 1 a.

Effect of developmental job characteristics on perceived career development (Hlb)

The correlations as already presented in Table 3, 4, en 5 suggest a strong relation between the level of different kinds of developmental job characteristics and perceived career development. Levels of developmental job characteristics in general, support and task-related characteristics were positively related and the amount of obstacles was negatively related to perceived career development (all p c .05). To further investigate the influence of developmental job characteristics on this subjective career measure, we first computed regression analyses for developmental job characteristics in general, and after that, we performed regression analyses for the specific categories of developmental job characteristics.

We found significant relation between developmental job characteristics in general and perceived career development (p = .03; β = .291 (1998); p = .23; β = .24 (1999). Two different categories showed also significant relations with perceived career development: Obstacles (p = .00; β = -.50 (1998); p = .02; β = -.25 (1999) and Support (p = .00; β = .562 (1998); p = .00; β = .32 (1999).). Because of the opposite signs, we also performed regression analysis on perceived career development including both support and obstacles. From this followed also a significant regression where perceived career development was dependent on Obstacles (p = .03; β = -.28 (1998) and Support (p = .002; β = .411 (1998). In other words, the levels of perceived career development will increase if an individual faces fewer obstacles and more support.

Next, we did also a difference-of-means test in order to test whether individuals

who have more developmental job characteristics are more satisfied with their career development than those who have less developmental job characteristics. The results showed that this was indeed the case, both in 1998 and in 1999. In particular, those who face fewer obstacles have higher levels of perception of one's career development, and those who are more supported perceived better career development than those who have, respectively, more obstacles and less support.

Effect of learning behavior on income (H2a)

The correlations showed that planned tacit learning behavior was correlated with levels of income ($p < .05$, r = .28 (1998) and instruction oriented learning behavior was negatively correlated with income $p < .05$; r = -.17 (1999) and r = -.25 (T2). To test hypothesis 2a, we further explored relationships between the different kinds of learning behavior and levels of income with the different data sets. First, we performed regression analyses for each kind of learning behavior with income as dependent variable. After that, we performed a one-way ANOVA to find out whether differences in learning behavior have effects on the levels of income.

From the regression analyses results that planned tacit learning behavior is the only kind of learning behavior that has a direct effect on income (F = 4.43, $p = .040$, 1998). The more an individual engages in setting goals for personal development and planning one's learning process, the higher the income.

The one-way ANOVA showed that differences in levels of income could be explained by differences in planned tacit learning behavior. There was a significant difference between levels of income between those who were more engaged in this kind of learning behavior. Hypothesis 2a was thus supported.

Effect of learning behavior on perceived career development (H2b)

Hypothesis 2b was tested in a similar way as hypothesis 2a. First, we tested the hypothesized relation by regression analyzes, and after that by one-way ANOVA. Before that, we looked at the relevant correlations from Table 1. From these correlation diagrams followed one consistent correlation, namely the positive correlation between planned tacit

learning behavior related to perceived career development. The regression analyses showed the same result; only one significant relation between planned tacit learning behavior and perceived career development ($p = .05$; $\beta = .26$ (1998); $p = .01$; $\beta = .29$ (1999).

From one-way ANOVA and difference-of-means tests resulted no significant differences between perceptions of career development among individuals who had different usage of learning behaviors. However, H2b was supported by differences of income as a consequence of the founded effect of planned tacit learning behavior.

Exploring causalities

In order to examine causalities in the individual learning process, we simply analyzed correlations between measures of our research variables over time. First, we analyzed the data matrix of chronological collected data (Table 6).

Insert Table 6

This includes 1998 data from the classes of 1996 and 1997, and 1999 data from the classes of 1996, 1997, and 1998. Secondly, we analyzed the data matrix of career stage data as presented in Table 5. This includes 1998 data of class 1997 (Tl), 1998 data of class 1996 and 1999 data of class 1997 (T2), and 1999 data of class 1996 (T3). Both analyses are described below.

Chronological collected data

In addition to the means and standard deviations of the study variables as followed from the data that was collected in 1998 and 1999, Table 6 presents correlations between, on the one hand, the scores of the study variables as collected in 1998 (vertical) and, on the other hand, the scores of the same study variables as collected in 1999 (horizontal). Below, this table will be elucidated in further detail. We will only report the relevant significant correlations between -and not within- variables both measured in 1998 and in 1999.

If we look at the correlations between learning behavior in 1998 and, respectively, learning opportunities in 1999 and learning outcomes in 1999, there are no significant correlations. There are also no significant correlations presented between learning opportunities in 1998 and, respectively, learning behavior in 1999 and learning outcomes in 1999.

Although we mainly interested in the influence of developmental job components and learning behavior on career outcomes, we report two specific significant relationships between learning outcomes of 1998 and learning behavior in 1999 that could be relevant for understanding the career development process. First, high objective job performance in 1998 will be followed by a high level of planned tacit learning behavior in 1999 ($r = .56$, $p < .01$). And secondly, a high level of income in 1998 will result in a high level of meaning oriented learning with a focus on underlying processes ($r = .52$, $p < .01$).

The correlations between learning outcomes of 1998 and learning opportunities in 1999 suggest a negative influence of high levels of objective job performance on the amount of transitions ($r = -.40$, $p < .05$). This illustrates the idea that high performing employees are not moved to other business units or parts of the organization. And, from an employee's point of view, individuals do not want to change jobs or functions as long as they are performing well. What happens if they have a high perception of their job performance and career development, is reflected by the other two significant correlations in this block. Both high levels of subjective job performance and subjective career development are followed in the next year by more task-related characteristics.

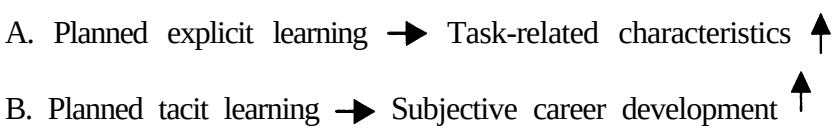
Career stage data

Our interest was to detect which causal relations as reported for chronological data in previous paragraph hold also for the career stage data set as described in Table 5. This information should tell us about the impact of career stage on the dynamics of the individual learning process. Furthermore, it could clarify whether career stage has to be taken into account as an important additional variable in further research into the management learning process.

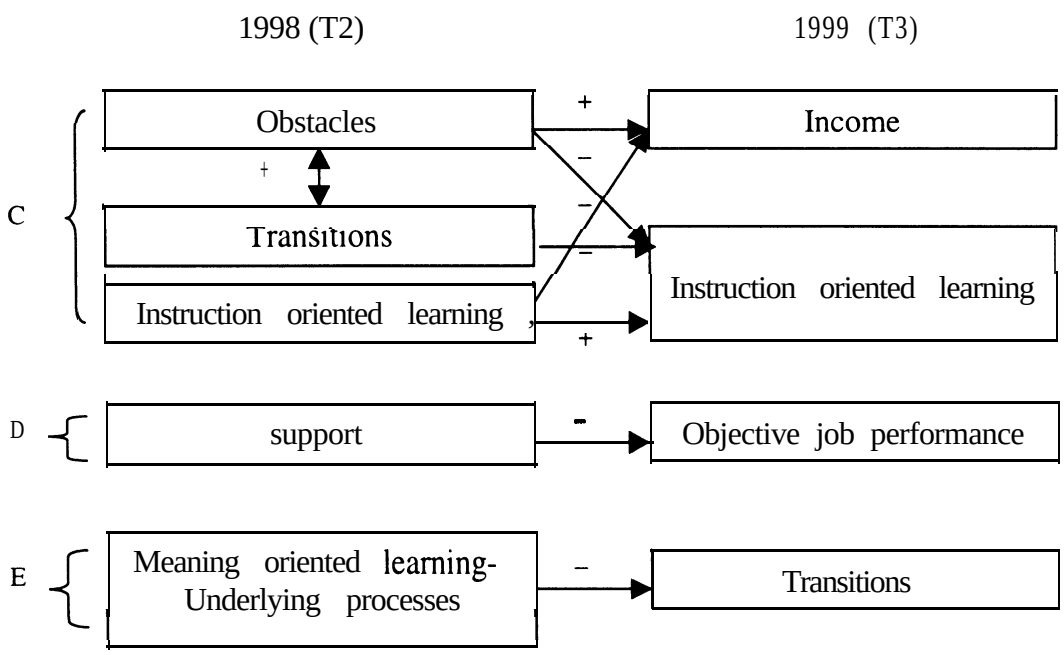
Without taking previous results into account as reported in former sections, some

specific causal relationships were found per career stage. Below, these dynamics are schematically presented.

Career stage 1:



Career stage 2:



In career stage 1, our findings indicate that planned explicit learning behavior in the first year results in more task-related characteristics in the second year, and through a positive interdepence with this kind of learning behavior, planned tacit learning behavior in year 1 increases the own perception of personal career development in year 2.

Notwithstanding the very small sample of MBAs in their second career stage, e.g. from the second year after graduation, we found a few specific causal relations between our research variables. For career stage 2, the results show that meaning oriented learning behavior with a focus on underlying processes in year 2 negatively influences the amount of transitions in year 3. And, few transitions in year 2 result in instruction oriented learning behavior in year 3 that has a negative effect on the level of income of the third

year. In addition, few obstacles in year 2 has a negative effect on the level of income in year 3 mediated by the level of instruction oriented learning in year 3. Moreover, support in year 2 negatively influences the objective measure of job performance in year 3.

To conclude, individuals with meaning oriented learning with a focus on underlying processes in year 2 of their careers are less likely to change jobs in the following year. Maybe at this advanced stage in their careers, they take more time to really get to understand their jobs. Those who have few job changes in year 3 will tend to be those who use instruction oriented learning which results in low earnings. Again, if there are few obstacles to be overcome then this again will result in low income. In addition, high boss support results in later low boss assessment.

All in all it seems as though by this stage in their career, MBAs are expected to have tough jobs with plenty of obstacles and to be able to cope with low boss support. In contrast, in the earlier stage in their careers these relationships are not found. In this stage it is rather the ability to set goals and formulate clear development plans for themselves which are needed since they seem to result in highly challenging jobs in the following year.

Stability of research variables

In order to test whether our research variables were stable over time, we performed additional t-tests based on career stage data as presented in Table 5. Table 7 shows the means and the standard deviations of the research variables as followed from the data that were collected among class 1997 in 1998 (Tl), among class 1996 in 1998 and class 1997 in 1999 (T2), and among class 1996 in 1999 (T3). Tl represents the time point of one year after graduation; T2 represents the time point of two years after graduation; and T3 represents the time point of three years after graduation.

Insert Table 7

Table 7 shows that planned tacit learning behavior during the first year after graduation is significantly correlated with this kind of learning behavior during the second year after graduation ($r = .74$, $p = .002$). During next years, the data shows that

planned explicit learning and instruction oriented learning are stable (respectively, r = .82, p = .047 and r = .52, p = .OOO). This indicates that, on the one hand, planned explicit learning behavior, and, on the other hand, instruction oriented learning behavior are stable during the second and third year after graduation. This underlines our earlier findings as reported earlier, by concluding that career stage makes a difference for stabilities of learning behavior.

Correlations among developmental job opportunities show a different picture. It follows that all five categories of learning opportunities have significantly different levels during the first and second year after graduation. However, the total amount of learning opportunities, obstacles, support, and task-related characteristics is stable between the second and third year after graduation. This is a rather different conclusion from earlier analyses based on Table 6. There we concluded that only the amount of task-related learning characteristics is stable over time. Therefore, these results again indicate that career stage is important to take into account when examining stability of learning factors.

Referring to career outcomes, the table shows a significant correlation between income in the second year after graduation and in the third year after graduation.

Overall, these results suggest that career stage is an important factor that helps us to examine our data and, by this, to clarify our earlier results. By distributing our data among the post-graduation years, in this case one, two, and three years, we detected that the dynamics of the management career development process differ between career stages.

There are many more significant correlations between T2 and T3 than between Tl and T2. This may be because the young MBA-er should treat their first year as an introduction period. Once this has passed, then a pattern has set in; learning opportunities stay the same. If you have been classified by the organization as someone who can take responsibility and act autonomously, then you continue to get jobs like this. And this puts you on the fast track as far as income goes which you then stay on. But there is no stability of the own perception of career development; however, income stabilizes.

Clearly our data show that you can feel you have done well one year and yet badly the next. This could indicate that they are given tough unpredictable jobs they have to

solve themselves. They might feel successful one year and not the next; they are being stretched- and a sign of being stretched is that you do not always succeed (Locke and Latham, 1990).

CONCLUSION

This study fills several gaps in past research into individual learning and developmental process on the job. Research linking learning behavior to learning settings has only been limited and often not the main research questions. In addition, researchers have not adequately explored whether learning behavior is a result or a cause of the learning environment. And, we are not aware of any study of repeated measures of developmental job characteristics and learning behavior in relation with career development. These issues are critical because current concepts of careers suggest that individuals are agents of their own development. Individuals have to take their own responsibility for their careers. Implicitly, continuous learning is the hallmark of today's careers. Based on these general elements of managerial learning and career development, it is suggested that both organizational and individual factors should be considered and investigated as determinants of career development.

First, we developed and tested hypotheses to identify the role of developmental job characteristics and individual learning behavior in the career development of MBAs. Second, the causalities between our research variables were explored by focusing on career stage dynamics of the developmental process at work. Finally, we investigated stabilities of developmental job characteristics and learning behavior as well as career development outcome variables.

From the first step followed that the amount of developmental job characteristics on the job affects an individual's perception of career development. Two specific kinds of developmental job characteristics have to be taken into account. Support from your boss positively effects the perception of career development whereas obstacles - that is lack of managerial and collegial support - negatively effect this. This illustrates the link between a stimulating and challenging job environment and an individual's job satisfaction. Apparently, current professionals have a desire for continuous learning on the job more or

less related to their awareness of their own responsibility for their learning and development. If they are in a work environment with motivating and challenging learning situations, they will enhance their employability. Then, as a result of developmental job characteristics, they will have a higher perception of their career development.

However, facing more obstacles is compensated by higher income. This could mean that current professionals, who are expected to take responsibility for their own continuous learning, pay for their support and feedback. In other words, those individuals who are indeed own agents of their career as demanded by today's flexible and downsized companies, pay for support and other developmental job characteristics. This interesting issue requires further investigation in future research in the field of organizational learning.

An other relation that was suggested by the data was the direct effect of learning behavior on career outcomes. If an individual engages in planned learning behavior with a deliberated focus on learning goals and developmental targets, he or she has a higher perception of personal career development. In other words, a person is more satisfied with his or her own career development if goals and targets are set beforehand. This could be a result of creating a more realistic view of their learning and development. Besides, this planned learning behavior relates positively with the level of income. Probably, defining clear goals and targets for your career helps to generate more income. This could be a result of making a personal development plan that is linked to a career path reflected in the level of income.

Analyses of the causalities between our research variables showed clear evidence of different dynamics of the developmental process at work per career stage. Learning behavior seems to be the most important predictor of the learning environment and outcomes from the first to the second year after graduation, while the learning environment is the most important influence on the kind of learning behavior and therefore objective career success from the second year after graduation. Income is positively effected by the amount of obstacles and negatively by instruction oriented learning. Facing many transitions and experiencing many obstacles probably forces individuals to unlearn instruction oriented learning behavior. This seems to indicate that

many job transitions, a difficult business environment with a lack of facilities, and stimulating job conditions could all have a positive influence on income. Also, asking for support from a supervisor results in lower objective performance evaluations than doing it alone and operating on ones own initiative.

In addition to our previous findings about the positive effect of planned learning behavior on the perception of career development, we found that this only holds during the first stage after graduation. From the second year after graduation, developmental job characteristics, like transitions and obstacles, becomes important for the level of objective career development.

Furthermore, we found several indications for the stability of specific research variables. In particular, instruction oriented learning behavior and planned explicit learning behavior were stable during the second career stage (T2 to T3), and planned tacit learning behavior was stable during the first career stage (Tl to T2). In addition, we found stabilities for all categories of learning opportunities, except for transitions, during the second career stage. Concerning learning outcomes, income was found to be stable during the second career stage while we found stability for subjective job performance during the first career stage.

DISCUSSION

This research examined the role of developmental job characteristics and learning behavior in the career development of MBAs. The results indicated that both opportunities and behavior are success factors for career development of this specific group, but their relative influence depends on the outcome measure and on the career stage. More spcifically, learning behavior is more important in predicting objective measures of career development (income and objective job performance), while learning opportunities explain more of the variance in subjective measures of career development (subjective job performance and perceived career development). These results indicate that both personal and organizational variables should be taken into account in order to be able to predict career development of young high level professionals in their early career stage.

Interesting is that there is a relationship between planned tacit learning behavior and subjective career development in stage 1 but not in stage *2*. It is as if, when the MBAs first start in a job, they have no clear ideas as to how to judge their career development. So they make their own criteria of what they need to achieve and do in the short term, and, based on this, they make a plan and goals. They can judge their career development based on measures they themselves drawn up. However, by the time stage 2 is reached, the measures they should use to judge their career progression may have become much clearer. Moreover, it will be far less easy to lay down clear learning goals and plans for the more challenging uncertain jobs which they then find themselves in.

In contrast to our finding for the first career stage, the three dynamics of stage 2 as discussed in this section reflect the fact that *behavior* rather than the attitude of an individual during the second stage of the career matters. The dynamics of the second career stage seem to be constituted by an individual's behavior. More specifically, individual behavior at work results from challenges in the work environment (C) and affects the tempo of the career development (E) as well as the objective measurements of career success (D); e.g., the level of income and objective job performance.

Another point to make here is that having obstacles is not the opposite of having support. A low level of support could mean that an individual is left alone to get on with the job with a low level of mentoring and coaching. In contrast, a low level of obstacles would suggest that an individual has sufficient resources to do the job properly.

A final remark we would like to make here is that we did not find any relations between learning behavior or learning opportunities and subjective indicators of learning outcomes. Probably, subjective learning outcomes depend upon many other factors than just the two we were measuring. For example, their perception of job performance and career development could be affected by their possible benchmarking with what their friends or partners are doing or their question whether they have chosen for the right function or employer.

Finally, it should be noted that this study refers to individual learning and career development from an individual perspective. The research questions were focused on mental and physical aspects of the learning process rather than on social-organizational

operations. This is not to say those social relations and interactions of employees are irrelevant in work-related learning. Pedagogical and adult education scientists and researchers of organizational behavior have already enhanced our knowledge about social and interpersonal relationships. While the interaction approach follows from a perspective of individual learning with a focus on individual behavior and interactions with the work context, further research from a network perspective offers an important frontier for further exploration. This will shed light on what happens between people as they interact socially in terms of learning experiences during their careers.

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TABLE 1

Data sets

1)	Class	1996	1997	1998	Total
Year of data collection					
1996	T_0	: N/A			
1997	T_1	: N/A	T_0 : N/A		
1998	T_2	: N = 33	T_1 : N = 23	T_0 : N = 7	N = 63
1999	T_3	: N = 23	T_2 : N = 44	T_1 : N = 31	N = 98

2)	Class 1996	Class 1997	Total
Year of graduation (TO)	N/A	N/A; *only descriptives (N=31)*	
1 Year after grad. (T1)	N/A; *only descriptives* (N= 70)	Data collected in 1998 (N=23)	**N=23**
2 Year after grad. (T2)	Data collected in 1998 (N=33)	Data collected in 1999 (N=44)	**N=77**
3 Year after grad. (T3)	Data collected in 1999 (N=23)		**N=23**

1) Chronological data: Data by class as collected each year

2) Career stage data: Data by class as collected per year after graduation

TABLE 2

Different learning behaviors based on factor analysis

Factor	*Description*	*Reliability*	*Nr. of items*
5)	Planned, Tacit Leiing Behavior[a)]	.79	4
4)	Planned, Explicitearning Behavior	.90	4
2)	Big Picture Orient Learning Behavior	.57	2
3)	Underlying ProceOriented Learning Behavior	.56	2
1)	Instruction Orient Learning Behavior	.73	2
6)	≤mergent LearnirBehavior	.49	2

[a)] The reliability of this scale bad on the 5 items following from the factor analyses was .44. After deletion of one negative contributing item, the reliability became .79. This improvement the reliability of the scale served as a justification for deletion of that item from the scale measuring planned tacit learning behavior.

TABLE 3

Descriptive Statistics and inter-correlation matrix of the main variables in 1998 (N=63)

Variables (all 1998)	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Instruction oriented LB	2.73	.83	—											
2. Meaning or. LB (Big Picture)	3.71	.81	.12	—										
3. Meaning or. LB (Und. Process)	4.10	.70	.33**	.21	—									
4. Planned LB (Explicit)	2.44	1.58	.08	-.09	-.12	—								
5. Planned LB (Tacit)	4.43	1.22	.21	.00	-.13	.47**	—							
Developmental job characteristics														
6. Total Learn. Opp.	2.33	.41	-.00	.29*	-.16	.33*	.05	—						
7. Obstacles	2.07	.68	-.02	.25	.18	-.05	-.05	.26	—					
8. Support	2.98	1.18	.13	.12	-.19	.24	.05	.54**	-.53**	—				
9. Task-related char.	2.51	.55	.14	.23	-.20	.28*	.01	.74**	.38**	.06	—			
10. Transitions	1.86	.58	-.15	.23	-.20	.29*	.04	.69**	.26*	.10	.56**	—		
Career development														
11. Income ($000)	79.7	52.5	-.03	.06	.09	.06	.28*	.11	.32*	-.26	.25	.23	—	
12. Perceived career development	5.53	.982	-.03	.08	-.21	.16	.26*	.29*	-.50**	.56**	.19	.08	.06	—

*: $p < .05$; **: $p < .01$; LB: Learning Behavior

TABLE 4

Descriptive Statistics and inter-correlation matrix of the main variables in 1999 (N=98)

Variables (all 1999)	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
Learning behavior														
1. Instruction oriented	2.46	.72	-											
2. Meaning or. (big picture)	3.74	.86	.18	-										
3. Meaning or. (underl. process)	4.10	.51	.02	.37**										
4. Planned (explicit)	2.61	1.72	.12	.20	.15									
5. Planned (tacit)	4.37	1.15	.17	.17	.14	60**								
Developmental job characteristics														
6. Total learning opportunities	2.53	.46	.03	.06	.17	.27*	.13	-						
7. Obstacles	2.16	.64	.05	-.06	-.02	-.08	-.26*	.39**	-					
8. Support	3.10	1.15	.13	.16	.14	.26*	.28**	.67**	-.25*					
9. Task-related characteristics	2.81	.58	-.23*	-.01	.15	.20	.06	.68**	.20	21	-			
10. Transitions	2.05	.61	-.05	.05	.08	.13	-.07	.72**	.39**	10	.53**	-		
Career development														
11. Income ($000)	80.6	32.9	-.17*	-.03	-.09	-.02	-.03	.14	.01	.00	.24*	.05	-	
12. Subjective career development	5.74	.92	-.25*	.14	.21*	.18	.29**	.24*	-.25*	.32**	.22*	.12	.07	-

*: Correlation is significant at the .05 level (2-tailed)

**: Correlation is significant at the .01 level (2-tailed)

TABLE 5

Descriptive Statistics and inter-correlation matrix of the main variables during career stage T2 (2 years after graduation) (N=77)

Variables (Stage T2)	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
Learning behavior														
1. Instruction oriented	2.56	.75	.											
2. Meaning or. (big picture)	3.75	.78	.22	.										
3. Meaning or. (underl. process)	4.19	.55	.11	.29*	.									
4. Planned (explicit)	2.45	1.55	.22	.09	-.oo	.								
5. Planned (tacit)	4.30	1.06	.18	.09	.04	.47**	.							
Developmental job characteristics														
6. Total learning opportunities	2.45	.46	-.02	.12	-.02	.30*	.21	.						
7. Obstacles	2.04	.69	-.05	.14	-.01	.04	-.02	.52**	.					
8. Support	3.10	1.09	.23*	.15	.05	.27*	.21	.54**	-.29*					
9. Task-related characteristics	2.72	.61	-.37**	-.03	-.06	.20	.09	.71**	.38**	.07				
10. Transitions	1.96	.60	-.09	.07	.04	.23	.15	.74**	.53**	.03	.57**	.		
Career development														
11. Income ($000)	86.7	50.9	-.25*	-.05	-.04	.01	.21	.08	.26*	-.30**	.25*	.19		
12. Subjective career development	5.68	1.02	-.22	-.03	-.05	.11	.23	.16	-.30**	.35**	.16	-.01	-.02	.

*: Correlation is significant at the .05 level (2-tailed); **: Correlation is significant at the .01 level (2-tailed)

TABLE 6

Descriptive Statistics and inter-correlation matrix of the main variables among data of 1998 and 1999 (N=98)

Variables (199811999)	Mean '98	S.D. '98	1-'99	2- '99	3- '99	4- '99	5- '99	6- '99	7- '99	8- '99	9- '99	10- '99	11- '99	12- '99
earning behavior (I 998)														
1. Instruction oriented	2.77	.82	.48**	.31	.11	.21	.19	.07	.23	-.08	-.05	.05	-.05	-.22
2. Meaning or. (big picture)	3.69	.80	-.23	.11	-.03	-.09	-.08	-.09	-.13	-.08	-.12	.02	.25	-.18
3. Meaning or. (underl. process)	4.08	.70	.I I	.04	.23	.07	.05	-.02	.Ol	-.11	.20	-.07	-.oo	-.13
4. Planned (explicit)	2.65	1.66	-.02	.34	.24	.58**	.46**	.10	.04	.18	.01	.04	.21	.24
5. Planned (tacit)	4.52	1.10	.24	.41*	.04	.48**	.64**	-.03	-. IO	-.07	-.04	.04	.24	.26
Learning opportunities (1998)														
6. Total learning opportunities	2.34	.42	-.22	-.38	-.01	-.06	-.23	.27	.23	.48*	.09	.07	.26	.12
7. Transitions	1.93	.62	-.26	-.28	.12	-.06	-.18	.17	.16	.32	.06	.02	.12	-.05
8. Task-related characteristics	2.47	.56	-.18	-.32	-.03	.13	-.09	.36	.40	.62**	.30	-.04	.26	.19
9. Obstacles	2.05	.71	-.24	-.08	.31	-.25	-.23	-.01	.01	-.14	.25	-.06	.06	.03
10. Support	3.02	1.21	-.05	-.08	-.05	.03	.oo	.10	-. 10	.29	-.30	.23	.26	.07
Learning outcomes (1998)														
I 1. Subjective job performance	5.74	.87	-.15	.06	-.08	.14	.32	.15	-.14	.40*	-.03	.15	.56**	.26
12. Income ($000)	77.04	52.49	-.17	-.02	.52**	.17	.13	.18	.03	.38	.29	-.03	.26	.64**

ote: Means and S.D. are based on data of 1998. Both inter- and intra-correlations reflect relationships between one variable measured in 1998 and another variable measured in 1999.

*: Correlation is significant at the .05 level (2-tailed); **: Correlation is significant at the .01 level (2-tailed)

Table 7

Descriptive statistics of the core variables per year after graduation

	T1 (N=23)		T2 (N=77)		T3 (N=23)		Corr. T1-T2	Corr. T2-T3
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
1. Instruction oriented LB	2.52	.91	2.56	.75	2.61	.77	-	r=.52 p=.047
2. Meaning or. LB (Big Picture)	3.50	.88	3.75	.78	3.91	.80	-	-
3. Meaning or. LB (Und. Process)	3.83	.81	4.19	.55	4.11	.50	-	
4. Planned LB (Explicit)	2.59	1.51	2.45	1.55	2.43	1.70	-	r=.82 p=.000
5. Planned LB (Tacit)	4.67	1.24	4.30	1.06	4.27	1.10	r=.74 p=.002	
6. Total Learning opportunities	2.24	.39	2.45	.46	2.60	.49	-	r=.84 p=.001
7. Obstacles	2.05	.64	2.04	.69	2.23	.51		r=.78 p=.001
8. Support	2.87	1.31	3.10		2.97	1.29	-	r=.85 p=.000
9. Task-related char.	2.36	.64	2.72	.61	2.87	.62		r=.93 p=.000
10. Transitions	1.90	.67	1.96	.60	2.13	.55	-	
11. Income ($000)	62.3	19.9	86.7	50.9	73.3	24.5	-	r=.77 p=.001
12. Perceived career development	5.35	1.06	5.68	1.02	5.78	.77		

Note: LB: Learning Behavior

FIGURE 1

Research Model

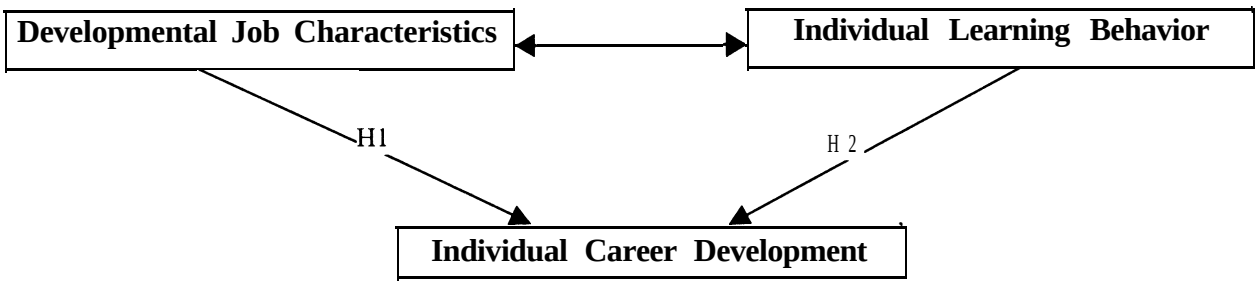

FIGURE 2

Learning Behavior